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✓ SPECIFICATIONS
FOR
City Hospital Buildings,



WORCESTER, MASS.

1880.

APR 30 1962

SPECIFICATION
OF
WORK AND MATERIALS
REQUIRED IN BUILDING THE
CITY HOSPITAL BUILDINGS,
FOR THE
CITY OF WORCESTER, MASS.,
ON THE
CORNER OF QUEEN AND PRINCE STREETS,
ACCORDING TO THE ACCOMPANYING DRAWINGS.

FULLER & DELANO, Architects.

HON. F. H. KELLEY, MAYOR.

MOWRY A. LAPHAM, HENRY A. MARSH, FRANK E. LANCASTER, THOMAS TALBOT, GRANVILLE A. LONGLEY,	} <i>Joint Standing Committee on Public Buildings of the City Council.</i>
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WORCESTER:
PRESS OF CHARLES HAMILTON,
1880.

REPUTATION

WORK AND MATERIALS

IN THE CITY OF BIRMINGHAM

CITY HOSPITAL BUILDINGS

THE CITY

CITY OF BIRMINGHAM, 1891

TO THE

COMMISSIONERS OF THE CITY OF BIRMINGHAM

AND TO THE CITY OF BIRMINGHAM

THE CITY OF BIRMINGHAM, 1891

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DRAWINGS.

The several Plans and Drawings herein referred to, are numbered as follows, and consist of:—

- No. 1. Basement Plan of Administration Building.
- “ 2. “ “ “ Wards.
- “ 3. “ “ “ Kitchen.
- “ 4. First Story “ “ Administration Building.
- “ 5. “ “ “ “ Wards.
- “ 6. “ “ “ “ Kitchen.
- “ 7. Front Elevation, Administration Building.
- “ 8. East “ “ “
- “ 9. West “ “ “
- “ 10. Front “ “ Wards.
- “ 11. Side “ “
- “ 12. Section, Administration Building and Kitchen.

And the Scale and Full-size Drawings to be made by the Architects as the work progresses.

GENERAL CONDITIONS,

FORMING A PORTION OF EACH SUB-CONTRACT.

Quality of Work and Materials.

ALL work described in these Specifications, or shown on the Drawings, and all the work necessary to the complete finish of the work so described or shown, is to be executed in a thoroughly substantial and workmanlike manner.

All work and materials in all cases are to be of the best description, unless otherwise distinctly described.

All the work shown on the Drawings is intended to be accurate according to the scale to which the drawing is made; but figured dimensions and detailed drawings are in all cases to be followed, though they differ from the scale measure. The architects will supply full-size drawings of all details, and any work constructed without such drawings, or not in accordance with them, must be removed and replaced at the contractor's expense.

Each contractor is to give his personal superintendence and direction to the work, and he is to furnish all transportation, labor, materials, apparatus, scaffolding, and utensils needful for performing his work in the best manner, according to the true intent and meaning of these Specifications and the plans which accompany them.

Each contractor shall give to the proper authorities all requisite notices relating to work in his charge; obtain all official licenses for temporary obstructions, enclosures, &c.; be responsible for any accidents resulting from either contract or extra work under his charge; make good any damage done to adjoining premises or sidewalks which he or his workmen may occasion; and comply with all city rules and pay all city fees.

Each contractor is also to pay for city water used in his work.

Each contractor shall at all times cover and protect his work, and the materials to be used therein, from damage by weather or otherwise, and shall repair and make good any damage thus occurring.

The contractor is to do all the work necessary to the perfect completion of his work, rectify any failure resulting from it, and maintain secure and firm the whole of it, including alterations and additions, should such be made.

No contractor shall make sub-contracts except with parties satisfactory to the architects.

Each contractor shall remove all dirt and rubbish resulting from his work from time to time as the architects direct, and shall make the premises neat and tidy, delivering the building at the completion of the work clean and whole and tight, and fit for occupation.

The committee will keep the building insured from the time the roof is covered in, the policies to be made payable to themselves.

SPECIFICATIONS

FOR

GRADING THE LOT, EXCAVATING FOR CELLARS, DRAIN
AND SEWER PIPES, AND LAYING FOUNDA-
TIONS AND SEWER PIPES.

Prices.

The price to be given per cubic yard for all earth excavations, to be measured in the bank and per perch ($16\frac{1}{2}$ c. ft.) for all foundations, and per lineal foot for sewer pipes including all Y's, bends, and traps.

Approximate Quantities.

The following are the approximate quantities of work required to be done; they are to be considered as approximate only, and the Joint Standing Committee on Public Buildings reserve the right of increasing or diminishing them as may be deemed necessary by the Architects:

9400 yds. earth excavation.

950 perch stone masonry in mortar.

370 ft. 12" sewer pipe.

160 ft. 8" " "

175 ft. 6" " "

Grading.

All excavations for grading the lot shall be made accurate to the lines and grades given by the Engineer and in accordance with plans, sections and instructions given by the architects. One foot of soil to be removed from the part to be graded and deposited in spoil banks on the lot where directed; excavate for cobble drain on south side of lot to the depth and dimensions shown on the drawings and fill the same with cobble stone from

bottom to top, a course of flat stone to be laid across the trench within one foot of the top, and above that the stone to be well placed to form a paved gutter beside the drive, as shown; the cost of cobble drain, paved gutter and grading of the driveway, to be included in the price paid for excavation.

Excavation.

Excavate for cellars and all trenches for walls and foundations for steps, corridors, &c., to the depth and dimensions shown on drawings, and trenches for all sewer pipes where directed.

Provide and fill in on the outer side of all foundation walls with one foot rolling-mill cinders from the bottom to top; grade up around all foundation walls; refill all trenches and leave the premises in a neat and tidy condition, at the completion of the work. All excavated material not wanted on the lot to be at the disposal of the contractor.

All sewers to be laid true to grade with the best cement sewer pipe with thoroughly cemented joints, the sizes of pipes to be directed by the architects.

Foundations.

All foundations to be built as shown with good junk or quarried stone, derrick laid.

Provide good flat bed stone not less than 10" thick for all walls, and those for the one-story wards and corridors to be 2.6" wide, all others to be 3 ft., well bedded in the trenches, the bed stone in all cases to be placed below the cellar bottom.

All foundation walls to be 2 ft. thick with at least $\frac{3}{4}$ of the stone to run through the full thickness of the wall and well faced on the inside and made regular and compact on the outside, with no projecting stones.

All walls to be laid in mortar composed of equal parts of cement and lime mortar mixed separately and thoroughly worked together, special care to be taken to have all stone flushed in mortar the full depth of the wall; all angles to be laid plumb and straight and all exposed faces to be smoothly pointed; make cobble drain inside and 2" below all bed stone as shown on plans and sections; the cost of cobble drain and placing cinders to be included in the cost of masonry in mortar.

All the work of the several kinds to be done in the most thorough and workmanlike manner by competent workmen, and no part to be sub-contracted to parties not approved by the architects.

The work to commence within six days after the execution of the contract and to be continued regularly until completed.

The grading of the lot and all foundations for the administration building, shall be completed on or before the first day of July next, and all foundations ready for the superstructure on or before the 20th day of July next.

CUT STONE.

Granite.

All posts, stringers, steps and platforms and ashler work to the entrance of administration building to be of light and dark granite as indicated on plans, and to be free from knots, seams, stripes or other imperfections; and all set in place in a thorough and workmanlike manner.

All steps, platforms and thresholds to be fine pointed face with fine cut margin lines; stringers, caps to posts and piers, noseing to platform to be first class fine 8 cut work.

All ashler work to have bold rock face, with straight sharp angles, allowing $\frac{1}{4}$ " for joints back 3" from face; caps on posts to have hole drilled for gas pipe. All face dressing to be true and uniform, and no stone will be accepted having hollows or concavities in the planes of their faces.

Every broken or imperfect stone to be replaced at the contractor's expense.

Do all jobbing, cutting and fitting necessary for laying the stone and whatever straightening and trimming is needed before pointing after the stone is in place.

All joints in steps and stringers to be leaded in a neat and thorough manner.

Sand Stone.

The basement of administration building and a portion of surgical building to be of the best Longmeadow sand stone, laid batter as shown on plans, with bold rock face and sharp straight angles, and from 6" to 10" thick allowing $\frac{1}{4}$ " for joints the full

thickness of the stone ; all reveals to be 8" at top with fine crandelled face, with sharp straight angles.

Water table to have fine cut wash, with rock face and 1" fine cut margin line at top and bottom.

All sills to be 3 courses brick high and run in 2" behind reveals to openings.

Provide best Longmeadow sand stone underpinning for front of corridors and return 37 ft. on the east ward, 18" wide with rock face 1 inch fine cut wash and margin line.

All stone trimmings above water table for administration building and front of wards to be of the best Ohio sand stone. All other trimmings to be of the best Longmeadow sand stone.

All exposed faces of sand stone work to be wrought in first class style of tooled work, with true parallel lines and at right angles to beds, every stone to be cut full and true on its face, reveals, beds and joints, allowing $\frac{3}{16}$ " for each joint and cut so as to lie upon its natural bed.

The stone contractor is to deliver all the stone at the site of the building in order, and at times to suit the convenience of the masons as directed by the architects, and all such stone must be free from stains, seams and of uniform and harmonious tint throughout ; any stone so delivered at the site which does not conform in quality, workmanship and dimensions, to the requirements of the drawings, will be rejected and must be replaced at the contractor's expense.

Do whatever cutting, jobbing and fitting is necessary for the mason in laying the stone and whatever straightening and trimming is needed before pointing after the stone is in place.

Mason Work.

All the brick used about the buildings to be good, sound, hard burned merchantable brick, and those for the administration building, front of the corridors and East side of ward No. 1, to be faced with brick equal in all respects to samples left with the Architects. All walls to be of the thickness figured or shown on drawings, and the arches over all openings to be the full thickness of the walls unless otherwise directed by the Architects ; turn brick arches back of all stone lintels and trimmer arches under all hearths.

Build and top out chimneys as shown on drawings.

All joints to be thoroughly filled with mortar and all flues to be plastered perfectly smooth.

Provide and build into each flue where directed, a 10x12 cast iron door, also all necessary thimbles for smoke pipes, and brick around the same, so they will not come in contact with any wood work.

All ventilating flues in the walls to be carefully and smoothly plastered with a coat of thin mortar.

Provide and lay black brick where shown or directed made black, by heating and dipping into hot coal tar ; no shining surfaces to be used.

All lime used is to be equal to best eastern lime, and all sand to be clean and sharp and well worked together, and that for the exterior to be colored brown with Prince's Metallic Paint to the amount of 60 lbs. to a cask of eastern lime.

All walls to be carefully bonded with a course of headers as often as once in every seventh course, the walls for ward buildings to have continuous vertical withes.

The bricks for the outside course to be carefully culled to a uniform color.

Setting Stone.

The stone cutter to deliver the stone at the building. The mason to receive and take care of it. He is also to set in the best manner according to drawings all the sand stone trimmings, including ashler, basement and underpinning.

He is to provide and fix all clamps, dowels, anchors, and with them tie each stone together and back to the building where directed by the architects.

Should the mason set any stone deficient in size, quality, color or depth of jamb he must take down and reset it at his own expense.

All window sills and similar stones are to be set firm at the ends with no mortar under the middle.

The mason is to be responsible for all damage that comes to the cut stone by accident and give notice to carpenter when protection work is required of him.

The mason is to fill up all putlocks holes, and carefully point up all joints with mortar the color of the stone, with a neat and

even joint, and carefully wash down the whole building at a time agreed upon with the architects, leaving all surfaces clean and perfect.

The mason is to set all iron work in connection with the brick work, including the iron smoke flue in large chimney and eight 10 ft. 4" rolled iron girders, also protect the work from the weather, at all necessary times, and allow his staging to remain for the use of other mechanics, firmly bed and fill in around all timbers thoroughly, point around all window frames on the inside and back of staff beads and window sills on the outside.

Concrete.

All basement floors to be leveled up with coarse sand or gravel at least 2" thick and have a layer of cement mortar $1\frac{1}{2}$ thick composed of one part fresh hydraulic cement and 3 parts coarse sand, finished smoothly on top.

Lathing and Plastering.

All walls, partitions and ceilings in first and second stories of administration building except etherizing and operating room, and all partitions colored yellow on plans, ceilings of ward and kitchen buildings to be lathed with good sound strip lath, free from loose knots, bark or anything to stain the plastering; lath to be laid breaking joints once in every seven or eight lath; all other walls to be plastered directly on to brick work; all the walls, partitions and ceilings in the first and second stories of each building to have two good coats of lime, sand and hair mortar and finished with a third coat of beach sand and lime. Brown mortar to be made at least two weeks before putting on.

All plastering to be rendered true and smooth and well worked up to grounds around openings, line of bases and other finish; particular care to have straight, sharp angles and neatly quirked at all angle beads.

The mason is to furnish all 3 lb. lead flashings to lay into brick work and cut in all frames for ventilating registers; remove staging and all dirt and rubbish occasioned by his work when and where directed by the architects.

Iron Work.

Provide and fix cast iron posts at front entrance for gas light as shown on drawings, with $4\frac{1}{2}$ " rolled wrought iron hand rail, with $1\frac{1}{2}$ " wrought iron pipe balusters, connected with cast socket joint; all joints to be covered with 3" gilded copper rosettes, both sides.

Balcony railing over porch to be made as above specified.

Cresting and finial for tower to be made as per drawings of cast and wrought iron, with gilded copper ornaments.

Provide eight 4" rolled iron girders 10 feet long, weighing 30 lbs. to the yard.

Anchor irons to be $1\frac{1}{2}$ "x $1\frac{1}{2}$ ", twenty-four inches long, with 3" turn at outer end, $\frac{1}{2}$ " at the other, with two holes each, with 4" wrought spikes, placed once in six feet on all floor timbers.

Provide $\frac{1}{2}$ " T plate bolts 18" long for all wall plates once in every seven or eight feet.

All cornice and ridges of administration building and all ventilators to be made of No. 26 galvanized iron, formed accurately to the full sized drawings given by the architects.

All gutters to be formed with 18 oz. copper as per drawings.

The administration building and corridor each side of kitchen, to have four 5" and two 4" corrugated iron conductors, and connect same with drain pipe in cellar.

Provide 22" wrought iron smoke flue for large chimney made from 3" iron, with riveted and calked joints, flue to rest upon $\frac{1}{4}$ " wrought iron plate and 2" angle iron, with iron and brick stays as shown in drawings. Provide four 1" rods 15 ft. long with suitable nuts and washers, to bolt tower roof to brick work.

Carpenter and Joiner.

All the work and materials to be of the best description unless particularly set forth to the contrary, and all the inside lumber including floors to be thoroughly kiln-dried.

Framing.

The several floors to be framed as shown with good sound spruce lumber, of the following dimensions:—Joists for first and

second story of the administration building to be 2"x12", 3d floor 2"x10", wards and kitchen 2"x10", corridors and second floor of kitchen 2"x8". All joists to be placed 16" from centre to centre and have $\frac{1}{2}$ x3 X or cross bridging well nailed. Girders to be 8x10; joist to be crowned $\frac{1}{2}$ " in their lengths; headers and trimmers to be double.

Floors.

All floors to have a lining of $\frac{7}{8}$ " spruce planed to a thickness; third floor in administration building to be single, planed, tongued and grooved spruce; no board to be more than 8" wide.

All other floors including corridors to have a top floor of $\frac{7}{8}$ " selected southern hard pine, well nailed; no board more than 4" wide. Connect floors and base with moulding throughout all wards, corridors, kitchen, etherizing and operating rooms.

All floors to be laid breaking joints both in their length and breadth, and made level and smooth.

Fit hard pine thresholds to all doors except those resting on stone, which are to have $2\frac{1}{2}$ " plank jambs properly doweled to stone.

Roof.

All roofs to be framed as shown, steep rafters and ceiling joists of administration building to be 2x6, for flat part 2x7, for kitchen 2x6, corridors 2x4 and 2x5, wards 2x8; tower rafters 2x5, hips 2"x8"; all rafters to be placed 16" from centre to centre; each rafter and ceiling joist on flat part of main roof to form a truss as shown.

Boarding.

All roofs to be enclosed with 1" planed, tongued and grooved seasoned spruce, breaking joints every 2 ft., well nailed to rafters.

Slating.

Roofs to be slated with 12" and 14" best "Brownville Main" slate, laid with $1\frac{3}{4}$ " under lap.

All roofs to be covered with tarred paper before being slated.

Gravel Roof.

Flat part of main roof and roof of porch to be laid with "Warren's Patent Roofing," in the following manner, viz: to have three layers of best roofing felt, a coat of cement, then three layers of felt, and a good coat of cement and gravel; the felt to turn up at least 12" under slate.

Flashings and Cement.

Eighteen inches each side of all hips, valleys and ridges, and four feet up from the eaves on the ward and kitchen roofs, to have the slate laid in elastic cement; all hips and valleys to be laid close, each course to be flashed with 9 oz. zinc; the slater to bed all ridge rolls in elastic cement and firmly secure the same; 9 oz. zinc to be laid in with each course of slate at junction of roofs with brick work, to turn up at least 4" under the lead laid in by mason, 3 lb. lead flashings to be used where slate connect with ventilators.

Provide and fix all other necessary flashings as may be directed by the architects to make roofs secure and proof against leakage.

Partitions.

All partitions in administration building to be made of 2x5" all others with 2x4" spruce studding, set 16" from centre to centre and bridged once in their height with 2x4 and 2x5 pieces cut in diagonally, and have 2x4 and 2x5 sill and plate.

Door studs to be double; fix truss over all door openings and in all partitions not having direct support.

Furring.

All brick walls in administration building to be furred with 2"x3" furring placed 16" from centre to centre, thoroughly spiked to wall, no spikes or nails to be driven into the brick work opposite any chimney flues; all ceilings to be furred with 1x3 well nailed to joists 16" from centre to centre; fix all other necessary furrings, grounds and "Griffin's" patent angle beads for plastering.

Centres and Frames.

Make all centres for arches, set all centres and frames where required for the mason; all frames to be painted one coat before being set.

Ventilation.

Make and fix six ventilating flues on each side of ward roofs, to connect brick ventilating flues, with a continuous ventilating shaft over ward, the ceilings of each ward to have three $2\frac{1}{2} \times 5$ feet openings into shaft with fancy sawed screen and flap doors arranged to open and close with a cord.

Make and fix ventilating shaft in service building as shown, connecting same with ventilators on roof fitted up with door and screen openings as may be directed by the architects; all the above to be made from clear thoroughly seasoned white pine. Do all cutting, fitting and joiner work in connection with plumbing, gas fitting and ventilation.

Separate Contracts.

Ventilating registers, gas piping and heating apparatus to be put in separate contract.

Windows.

All windows except ward and kitchen basements to be $1\frac{3}{4}$ " double sliding white pine lip sash in box frames, hung with best cord, 2" steel axle, Boston finish pulleys, and evenly balanced weights, and furnished with the "Morris" sash locks of the value of two dollars per dozen.

Basement windows to be $1\frac{3}{4}$ " sash in plank frames hung at top with stout iron hinges, with strong button fastenings at bottom.

Glass.

All glazing to be done at least three weeks before fitting the sash; all glass to be first quality "German," free from rust or other imperfections, and of sizes figured on elevations.

Shutters.

All windows in the administration building to have $\frac{7}{8}$ " four-fold inside blind shutters, outside fold to be paneled, inside all rolling

and cut at height of middle rail of sash, hung and furnished with hardware selected by the architects of the value of one dollar to each window.

Doors.

Front entrance doors to administration building to be $2\frac{1}{2}$ " ash doors, with top light and plate glass panels as per drawings, hung with hardware selected by the architects of the value of \$10. All other outer and basement doors to be white pine four panel, outer doors $1\frac{3}{4}$ ", basement $1\frac{3}{8}$ " thick, hung and furnished with hardware of the value of 8 dollars for outer side doors and \$1.50 each for basement doors.

All other inside doors to be $1\frac{3}{4}$ " selected Western ash, hung and furnished with hardware as may be selected of the value of \$2.25 each.

All doors to be of sizes figured, and have ground glass panels when so indicated on plans, made accurately to drawings furnished by the architects from perfectly seasoned stock and have $1\frac{1}{2}$ " rabbeted jambs.

Exterior Finish.

All exterior finish to be as per drawings, of clear seasoned white pine.

Interior Finish.

All interior finish to be made accurately to drawings, of the best Western ash, except corridors, which are to be finished with selected Southern hard pine; walls and ceilings to be sheathed with $\frac{3}{4}$ " planed, tongued, grooved and V'd sheathing, no board to be more than 4" wide, and blind nailed.

First story Hall in administration building to have dado 3 ft. high of planed, tongued, grooved and V'd ash, with cap and base as shown.

Fit up patients' clothes closet with double coat hooks, with partings between each, and linen closets with slat shelves, as directed; also bed-pan racks in lavatory.

Fit up pantry, and china closets in administration building, china closet and pantry in kitchen building, with board shelf and 3 narrow shelves above; enclose under broad shelf with sheathing, panel doors and 3 drawers each; storeroom to have shelves fitted up on one side.

Stairs.

The stairs to be built as shown on plans, with 2" plank strings, 12" on centres; treads to be $1\frac{1}{8}$ ", risers $\frac{7}{8}$ " ash. All enclosed stairs to have wall rail secured with iron brackets.

All newels, hand rails and balusters, buttresses and bases to be as per drawings, of best selected Western ash.

Steps to corridors and kitchen entrance to be made as shown, with 2" plank stringers, $\frac{7}{8}$ " risers, and $1\frac{1}{2}$ " white pine treads.

PLUMBING.

Administration Building.

Provide and fit up where shown three 14" patent overflow Wedgewood bowls, with sunk marble top and plain marble back, 15" high, with $\frac{1}{2}$ " nickel plated compression cocks, chains and plug complete, for hot and cold water.

Fit up where shown two 12"x16" planished copper pantry sinks in sunk marble slab, and 15" back, with $\frac{1}{2}$ " nickel plated pantry cocks, chain and plug.

Fit up where shown one five-foot 12 oz. planished copper bath tub, with $\frac{5}{8}$ " nickel plated compression cocks, chain and plug complete.

Fit up where shown three best 4" S lead trap ventilating water closets, with enameled vent hoppers, with $\frac{1}{2}$ " nickel plated hopper cock, and 2" tin ventilating pipe with soldered joints, running into chimney; and with enameled iron urinal safe; soil pipe for water closet to be of the best 4" cast iron, joints to be calked with oakum and molten lead, and connected with main drain pipe in basement.

Kitchen Building.

Fit up in china closet a 12x16 planished copper pantry sink, with $\frac{1}{2}$ " nickel plated pantry cock, chain and plug for hot and cold water, with sunk marble top and plain marble back, 12" high.

Fit up long wooden sink made by carpenter with four $\frac{5}{8}$ " brass compression cocks, two for hot and two for cold water.

Fit up in Basement S trap (iron) ventilating water closet, with enameled vent hopper, and 2" tin ventilating pipe, with soldered joints running into chimneys, and $\frac{1}{2}$ " nickel plated hopper cock and enameled iron urinal safe; soil pipe to be best 4" cast iron, joints to be calked with oakum and molten lead; and connect the same with main drain pipe in basement.

Wards.

Fit up in each ward four 14" patent overflow Wedgewood bowls, with sunk marble top and 12" back, and $\frac{1}{2}$ " nickel plated compression bibs, chain and plug for hot and cold water.

Fit up one enameled cast iron bath tub in each one story, and two in each two story wards, with $\frac{5}{8}$ " nickel plated compression bibs, chain and plug for hot and cold water.

Fit up two and three best S trap (iron) ventilating water closets with enameled vent hopper and urinal safe, with 2" tin ventilating pipe with soldered joints, running into ventilating flue and with $\frac{1}{2}$ " nickel plated hopper cocks.

Fit up marble slop sink with enamel hopper and $\frac{5}{8}$ " nickel compression bib, as per drawings made by the architects; soil pipes to be the best 4" cast iron with joints calked with oakum and molten lead.

Supply and Waste Pipes.

Supply from street main to boiler room to be 2" galvanized iron; main supply pipes to wards to be $1\frac{1}{2}$ " galvanized iron.

Supply to lavatories in each ward to be $\frac{3}{4}$ " 3 lb. lead pipe. All branches to bowls, tubs and water closets, to be $\frac{5}{8}$ " 2 $\frac{1}{2}$ lb. All waste for bowls, pantry sinks, and tubs, to be $1\frac{1}{4}$ " 2 $\frac{1}{2}$ lb., and for kitchen sink $1\frac{1}{2}$ " 3 $\frac{1}{2}$ lb. lead. All main hot water supply to

be 1" $3\frac{1}{2}$ lb. and branches to bowls, sinks and tubs $\frac{5}{8}$ " $2\frac{1}{2}$ lb. lead pipe; safes to have $\frac{3}{4}$ " $1\frac{1}{2}$ lb. wastepipe.

Shut-off Cocks.

Provide and fix in each $\frac{3}{4}$ " main supply pipe a $\frac{3}{4}$ round way stop and waste cock.

All hot water pipes to be connected with hot water boiler in each basement.

Traps.

Place 6" bottle trap to each bath room and kitchen sink, to trap tub, bowl, water closet and sink, and 4" to bowls and pantry sinks; all waste pipes from traps to enter Y's in soil pipe, below water closet traps; the 4" soil pipes in each building except kitchen to be carried up through the roof and finished with copper top.

All soil pipes to be carried through the foundation walls outside of the buildings; the main pipe through the administration building to be 7" iron pipe, and those from each ward to be 6" iron soil pipe; all joints to be thoroughly calked and leaded.

All pipes throughout the building to be carefully graded and firmly fixed.

All marble tops to be $1\frac{1}{2}$ " and backs $\frac{3}{4}$ " thick of best Italian marble; all bowls to be secured to slabs with brass clamps; 3 lb. lead safes turned up 2", to be placed under each bowl, water closet and sink in second story of administration building.

The several works to be fitted up in a thorough manner with first class materials, and with all the necessary supply and waste pipes, shut off cocks, traps, &c. All joints to be plumbers' wipe joints, and all to be executed by skilled mechanics.

Painting.

All exterior wood work and inside pine finish to have three good coats of "Red Head" lead and oil, of such tints as may be directed.



All interior hard wood, including stair newels and rails, to be thoroughly filled, rubbed down, and have two good coats of white shellac, well rubbed down, and finished with a coat of walnut finish.

Hard pine sheathing and finish to have two coats white shellac and a good coat of walnut finish.

All sashes to be stained on the inside and painted outside, of tints as directed by the architects.

Protection.

Cover from injury all stone projections, platforms and steps, as the architects may require, until the completion of the work; furnish labor and materials to close up all door and window openings with frames and cloth during the progress of the work; outer doors to have locks.

If deemed advisable to keep the buildings warm during the time after the buildings are enclosed to the commencement of the plastering, the contractors shall furnish heating apparatus and tend fires, the committee to provide fuel.

The contractor to furnish all fuel and heating apparatus for drying plastering and putting up the finish at such times and amounts as the architects may direct.

Time.

The work to be commenced within ten days after the execution of the contract, and continued regularly until completion. The roofs to be finished on or before the first day of January next; the plastering to be done in the months of April and May next; and all the works entirely and completely finished on or before the fifteenth day of August, eighteen hundred and eighty-one.

